

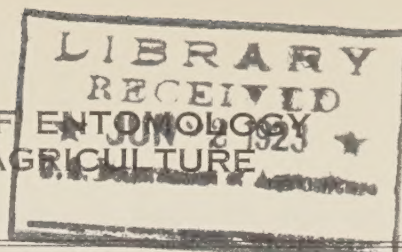
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UNITED STATES DEPARTMENT OF AGRICULTURE



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BEE CULTURE INVESTIGATIONS

E. F. Phillips, Apiculturist in Charge

A. D. Shaftesbury, Bruce Lineburg, and B. Kurrelmeyer of Johns Hopkins University and Prof. L. M. Bertholf of the North Carolina College for Women have been appointed as temporary assistants beginning June 1. These men were all at the Bee Culture Laboratory last summer studying special problems for which material is available only in the summer and are returning to continue the same studies. Mr. Lineburg will receive his master's degree in June and his thesis will consist of the results of the work done last summer, the paper being entitled, "Feeding of Honeybee Larvae."

A. E. Lundie, who was at the Bee Culture Laboratory part of last summer, and again for a time during the winter, has sailed for his home in South Africa. He will receive his doctor's degree from Cornell University in June, his thesis being the paper prepared while at the Bee Culture Laboratory, entitled "A Study of the Flight Activities of the Honeybee." Mr. Lundie will have charge of the beekeeping work for the South African Government on his return home.

A. P. Sturtevant appeared before a board of experts on May 29 to defend his thesis presented for his doctor's degree from the George Washington University, the degree to be granted at the coming commencement exercises. His thesis is entitled, "The Development of American Foulbrood in Relation to the Metabolism of its Causative Organism."

Paul E. Smith, Effie Marie Ross, and Mary G. Rozelle have been appointed as temporary aids for a continuation of the work on the temperature of the bee colony during the active season which was done last year. This year the work will be carried out only during the period of the heavy honey-flow from tulip-tree during the month of May, in order to get additional data for this important period.

The Charles C. Miller Memorial Apicultural Library, established by gift of the beekeeping friends of Doctor Miller, will be dedicated on August 17 at the University of Wisconsin. On the following day a memorial tablet will be unveiled in the church at Marengo, Illinois, where he worshiped for many years. It is expected that the dedication will be the largest gathering of beekeepers which has ever been held in this country. A program has been arranged for the entire week beginning August 13, which this year will take





the place of the usual summer Chautauqua for beekeepers held by the university. The library already contains several hundred valuable books, many of them rare, and a large number of files of bee-journals from all parts of the world.

Because of the present economic conditions in Germany, the Berlin Bieneninstitut is in danger of being entirely discontinued. To prevent this an effort is being made in the United States to raise funds sufficient to insure the continuation of the valuable research work of this institute. Dr. Ludwig Armbruster, Director of the Institute, is also editor of the Archiv für Bienenkunde, the only strictly scientific journal devoted to bees and beekeeping, and the aid to the institute will probably insure a continuation of this journal.

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#### FOREST INSECT INVESTIGATIONS

T. E. Snyder, Entomologist Acting in Charge

Dr. J. M. Swaine, in charge of Forest Insect Investigations of the Dominion of Canada, visited this branch during the first part of May. Doctor Hopkins showed Doctor Swaine the Forest Insect Collections, particularly the Scolytidae. Doctor Swaine also visited the Eastern Field Station at East Falls Church, Va. On May 2 Doctor Swaine with Doctor Snyder visited Ashland, near Richmond, Va., where control operations were being conducted against the southern pine beetle, Dendroctonus frontalis Zimm. Termites or white ants were found to constitute, as usual, one of the principal factors in rapidly rendering standing beetle-killed timber unmerchantable.

W. D. Edmonston and George Hofer are at present on the Kaibab National Forest and Grand Canyon National Park, where control work is being conducted in cooperation with the Forest Service of this Department and the National Park Service of the Interior Department against the Black Hills beetle, Dendroctonus ponderosae Hopk.

R. A. St. George left Washington May 20 for points in Kentucky, Georgia, Mississippi, and Alabama, to supervise the cooperative experiments with lumber companies intended to prevent insect damage to green logs and lumber by ambrosia beetles and borers, and also damage to seasoned products by Lyctus powder-post beetles. Mr. St. George is also to report on the present status of an epidemic of the southern pine beetle, Dendroctonus frontalis Zimm.

Many arborvitae and boxwoods in the vicinity of Washington, D. C., are suffering from attacks by two leaf-miners -- the lepidopterous arborvitae leaf-miner and the dipterous boxwood leaf-miner. William Middleton of this





office is investigating these insects in this locality, particularly the infestation of the arborvitae leaf-miner in the Arlington National Cemetery, Arlington, Va., where it is especially severe.

H. E. Burke has completed the requirements for the Ph. D. degree at Leland Stanford Junior University and will receive his degree in June. Mr. Burke's major is entomology, with work on the Pacific flathead borer, and his minor is physiology, with work on The Toxic Responses of the Lead-Cable Borer.

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### TRUCK-CROP INSECT INVESTIGATIONS

J. E. Graf, Entomologist Acting in Charge

Dr. F. H. Chittenden, who has been in charge of Truck-Crop Insect Investigations, will devote his time in the future to special studies of truck-crop insects and to taxonomic work.

J. E. Graf, lately in charge of field work pertaining particularly to the sweet-potato weevil in Florida and the Mexican bean beetle, with headquarters at Birmingham, Ala., has been transferred to the central office at Washington, D. C., as acting head of Truck-Crop Insect Investigations.

C. H. Popenoe, entomologist in Truck-Crop Insect Investigations, has been authorized to devote his entire time to fundamental research work in insect behavior and chemical control, and will establish headquarters at the laboratory at Sligo, Md., where investigations of fruit insects and truck-crop insects are being conducted.

W. H. White has just returned from Seaford and other points in Delaware, where, in company with C. C. Woodbury of the National Cannery Association, he made general observations tending toward a better knowledge of the practical control of the pea aphid on cannery peas with nicotine dusts, applied by high-power apparatus.

J. E. Dudley, Jr., in charge of the investigation of the pea aphid in its attacks on cannery peas, has been authorized to assume temporary headquarters at Columbus, Wis., where he will undertake cooperative control experiments and studies throughout the pea-growing season, in cooperation with State entomologists and the Columbus Canning Co.

R. E. Campbell reports successful results in the control of the pea aphid on cannery peas in southern California, as the result of extensive experiments undertaken in the vicinity of San Jose. The experiments indicate that sufficiently inexpensive control measures will be worked out in the near future.







Messrs. Morgan and Gilmore, of the Tobacco Insect Laboratory, at Clarksville, Tenn., visited the Mexican Bean Beetle Laboratory, at Birmingham, Ala., May 14.

L. L. English, junior entomologist, Mexican Bean Beetle Laboratory, is carrying on cooperative control work with several growers in the vicinity of Chattanooga, Tenn.

Dr. William Moore, collaborator of the Bureau of Entomology, and now chief entomologist with the American Cyanamid Company, New York City, visited the Mexican Bean Beetle Laboratory during April.

The Mexican bean beetle has been reported from Auburn in Lee County, Ala., by Dr. F. L. Thomas of the Alabama Experiment Station, and from Itawamba County in the northeastern corner of Mississippi by Prof. R. W. Harned and R. B. Dean, of the Mississippi State Plant Board.

Victor Duran, for a number of years connected with the Alhambra laboratory, has been temporarily appointed to assist Mr. Campbell in experiments against the pea aphid and other truck-crop pests.

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#### SOUTHERN FIELD-CROP INSECT INVESTIGATIONS

J. L. Webb, Entomologist Acting in Charge

Dr. W. D. Hunter addressed the annual meeting of the Western States Plant Quarantine Board at Phoenix, Ariz., May 22.

A cotton boll weevil laboratory and field station has been opened at Florence, S. C., under a cooperative project between this Bureau and the South Carolina Experiment Station, with Dr. N. E. Winters in charge. Early in May Mr. Coad spent a few days at Florence, conferring with Professor Barre, Professor Conradi, and Doctor Winters relative to the plans for this season's experiments. H. C. Young and V. V. Williams of the main Boll Weevil Laboratory at Tallulah, La., have been detailed to the Florence station. In addition, a number of entomologists will be employed. Plans were made to study primarily the particular points of weevil biology and behavior which have local significance in connection with control measures.

Extensive tests are planned to include the field use of all of the principal suggested measures of control, such as the dusting method, the Florida method, and the use of sweetened poisons. In addition to the work at Florence, certain of these experiments will be repeated at Clemson College and several other points in the State, representing the principal topographical districts.

The experimental work to be conducted at the Boll Weevil Laboratory at Tallulah, La., relative to the use of airplanes for distributing poison dust





for the control of the boll weevil is now under way. In April, three De Havalind 4B planes were detailed by the Air Service for use in this work in cooperation with the War Department. These planes are under the command of First Lieut. Guy L. McNeil, who served on this same project last season. Allen L. Morse, an aeronautical engineer from McCook Field, Dayton, Ohio, was also detailed for duty on this project and arrived at Tallulah shortly after the arrival of the planes. It has been found that owing to the different behavior of the De Havalind planes, as compared with the small Curtis plane used in the experiments conducted last year, the dusting problem becomes quite different, and the mechanical problem of providing suitable distributing mechanism is very complicated. Several types of dust hoppers have been constructed for use in these planes. This phase of the work is still in an experimental stage and it will require considerable time and experimentation before a final design for a hopper can be decided upon. Mr. Coad, who is in charge of the Boll Weevil Laboratory, hopes to have a fairly satisfactory permanent hopper installed in at least one of the planes in time to use it in actual control work during the summer months. Several plantations near the landing field have been mapped and all arrangements made for poisoning the cotton on these in an effort to accomplish boll weevil control through the season.

After spending several months in Baltimore, Dr. W. V. King has returned to Mound, La., and resumed active charge of the Malaria Mosquito Laboratory at that place. While in Baltimore Doctor King cooperated with Johns Hopkins University, working up a vast number of statistical data relating to notes on malaria mosquitoes collected at Mound.

C. M. Smith, detailed from the Bureau of Chemistry to investigate the chemical and physical properties of calcium arsenate and the influence of various factors in the application of this insecticide to the cotton plant, has started on field work for the season at Tallulah, La.

A. C. Morgan, in charge of the Tobacco Insect Laboratory at Clarksville, Tenn., addressed gatherings of Burley tobacco growers in Gallatin, Columbia, and Shelbyville, Tenn., May 31 to June 2, his subject being the control of tobacco insects.

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## FRUIT INSECT INVESTIGATIONS

A. L. Quaintance, Entomologist in Charge

Fred. E. Brooks, of French Creek, W. Va., writes as follows:

"The extensive injury done to chestnuts by weevils of the genus *Balaninus* is indicated by two notes received recently at this station. The notes are as follows:

"Dr. W. G. Campbell, Acting Chief of the Bureau of Chemistry, states that between the years 1911 and 1916, inclusive, shipments of





chestnuts that were unfit for food aggregating 493 bags and 280 barrels were seized under the Pure Food and Drugs Act and either condemned and destroyed or returned under bond to claimants for reconditioning. In many cases the shipments were seized because they consisted in part of filthy animal and vegetable substance, to wit, worms, worm excreta, worm-eaten chestnuts, and decayed chestnuts. Subsequent to 1916 seizures of wormy chestnuts in interstate shipments have continued, but these have been made chiefly by city and State food officials and the Bureau of Chemistry does not have the records of such seizures.

"G. F. Gravatt, of the Bureau of Plant Industry, who is conducting investigations in chestnut blight control in a chestnut orchard at Bell, Md., states that injury from weevils is so extensive in the orchard as to interfere seriously with experiments undertaken. In many instances valuable hybrid nuts produced in attempts to secure blight-resisting varieties have been so injured by weevils that they would not germinate."

"In central West Virginia the ground beneath beech trees (Fagus americana) is often found strewn with medium-sized branches which have broken off and dropped as a result of girdles made by larvae of the cerambycid species Xylotrechus quadrimaculatus Hald. The girdles are made in the summer and the branches usually drop during the succeeding autumn, when they are heavy with foliage and maturing nuts. Quite often young beech trees are severed within a few feet of the ground. Attempts to destroy the insect by gathering and burning the fallen branches are only partially successful, since only about 50 per cent of the larvae drop and pupate in the branches. The others remain in the stump to complete their transformation."

Experiments with paradichlorobenzene for the peach borer reported by O. I. Snapp, Fort Valley, Ga., substantiate those of 1921 and 1922 as indicating that a dose of  $3/4$  of an ounce can be used with safety over an exposure period of 28 days on three and four year old peach trees in the latitude of central Georgia.

W. D. Whitcomb, who is assisting Mr. H. K. Plank, in charge of camphor scale investigations at New Orleans, La., has just reported on his trip of inspection for the camphor scale. Certain nurseries of southwest Louisiana and southeast Texas were visited in company with Torbert Slack, Inspector, Louisiana Department of Agriculture and Immigration, and R. F. Campbell, Inspector, Texas Department of Agriculture. The insect was found in small numbers on camphor at Lake Charles, La., and on the site of a former extensive nursery at Alvin Texas. Despite the abundance of camphor trees at this place, the insects had not developed to a very large extent. Mr. Whitcomb was unable to ascertain definitely what factors were responsible for keeping the insect reduced, aside perhaps from heavy winds, intense heat, and storms.

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## STORED-PRODUCT INSECT INVESTIGATIONS

E. A. Back, Entomologist in Charge

John F. Cotton, a student at Cornell University, has been appointed laboratory aid for the summer months.

The Modesto, Calif., Chamber of Commerce appointed a committee to interview the Board of Supervisors regarding the seriousness of the bean weevil situation in Stanislaus County. Following a conference with the Farm Center Directors, the Chamber of Commerce extended to A. O. Larson, of the Bean Weevil Investigations at Alhambra, an invitation to visit the county and discuss the bean weevil situation at different places, with the view to securing widespread interest in better control methods for this pest. Mr. Larson's work has been highly commended by Lester F. Baker, Chairman of the Bean Weevil Committee of the Modesto Chamber of Commerce.

An experimental demonstration was started by the Bureau nearly two years ago with a local business firm, in which the Bureau undertook to eliminate loss for the two-year period to stocks of brushes by fumigation with hydrocyanic-acid gas. The company provided a room in which to store their stocks and in which they could be fumigated without moving. The experiment has demonstrated the possibility of preventing losses of this kind by the methods adopted, and the company has been the gainer by several thousand dollars annually.

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## LIBRARY

Mabel Colcord, Librarian

### New Books

Brues, C. T.

Is poliomyelitis an insect-borne disease? In Scientific Monthly, v. 16, no. 5, p. 471-487, illus., May, 1923.

Brues, C. T.

Some hymenopterous parasites of lignicolous Itonidae. In Proc. Amer. Acad. Arts and Sci., v. 57, no. 11, p. 263-288, 2 pl., May, 1922. Literature cited, p. 282-283.

Bureau of Applied Entomology, Petrograd, Russia. Agricultural Scientific Committee. Reports v. 2. Edited by V. P. Pospelov. 1922.

Butler, E. A.

A biology of the British Hemiptera-Heteroptera... London, 1923. vii, 682 p., illus., 7 pl. Bibliography, p. 603-619.

Clayton, William.

The theory of emulsions and emulsification. Foreword by F. G. Donnan. Philadelphia, P. Blakiston's Son & Co., 1923. 160 p., illus., 19 pl. Bibliography, p. 145-157.





Crespo, M. A., and Catoni, L. A.

Restricciones legales al comercio de plantas en Puerto Rico.  
San Juan, P. R., Negociado de materiales imprenta y transporte, 192.  
20 p. (Puerto Rico Departamento de agricultura y trabajo. Circular  
27, Estacion experimental revisada.)

Dunn, L. H.

Bathing and delousing American troops at Brest, France, prior to  
their embarkation for the United States. 7 p. Reprinted from The  
"Military Surgeon for March, 1923.

Durken, Bernhard.

Die postembryonale Entwicklung der Tracheenkiemen und ihrer Muskulatur  
bei *Ephemerella ignita*. In *Zoologische Jahrbücher*, Abt. f. Anat.,  
Bd. 44, Hft. 4. Jena, 1923. p. 439-626, illus., fold., pl. 26-28,  
Literaturverzeichnis, p. 626.

Ferriere, Charles.

Entomologie economique. Les problemes modernes de la lutte contre  
les insectes et leur application en Suisse. Berne, 1922. 36 p.  
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Fiebiger, Josef.

Die tierischen Parasiten der Haus und Nutztiere sowie des Menschen.  
Ed. 2. Wien und Leipzig, Wilhelm Braumüller, 1923. 437 p., illus.

Forel, Auguste.

Le monde social des fourmis du globe. v. 3. Appareils d'observation,  
fondation des fourmilière, mœurs a l'interieur des nids. Bétail,  
jardins, fourmis parasites. Appendice: La guerre des fourmis et de  
termites, la genèse des instincts expliquée par cette guerre, par  
le dr Edouard Bugnion. Genève, Librairie Kundig, 1923. 225 p., illus.,  
8 pl.

Gates, B. N.

Everyday essentials of beekeeping. Revision of Apiary Inspection  
Bulletin no. 14. Boston, 1923. 32 p., 4 pl. (Mass. Dept. of Agr. Dept.  
Pub. no. 121.)

Gt. Brit., Dept. of Scientific and Industrial Research.

The cleaning and restoration of museum exhibits. 1st-2d report on  
investigations conducted at the British Museum. London, 1921-23. pls.

Hegh, E.

Les termites... Bruxelles, Imprimerie industrielle & financière,  
Sept., 1922. 756 p., illus. Bibliographie, p. 715-747.

Houlbert, C.

Tableaux génériques illustrés des coléoptères de France. Supplement  
à la Faune entomologique armoricaine ... Rennes, Imprimerie Oberthur,  
1922. 288 p., illus. (Travaux scientifique de l'Université de Rennes,  
v. 16, 1922)

Knechtel, W. K.

Phytodecta fornicata Bruggm. Bucuresti, Viata "Romaneasca" S. A.,  
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The role of olfactory sensation in selection of food by ants. In Jour. Dept. of Science, Univ. of Calcutta, v. 4, Physics, 1922. p. 109-124.
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On the structure of the alimentary canal and its ferments in the bee (*Apis mellifera* L.) In Quar. Jour. Micros. Sci., v. 66, pt. 3, Sept., 1922, p. 509-556, pl. 15-17. References, p. 551-553.
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Insects attacking forest and shade trees. Augusta, Maine, 1923. 56 p., illus. (Maine Forest Service, bul. no. 1.)
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The international metric system of weights and measures, ed. 2. Washington, Government Printing Office, Sept. 21, 1922. 13 p. (Bureau of Standards, Miscellaneous publication no. 2.)
- Warburton, Cecil.  
Spiders. . . Cambridge, At the University press, 1921. 136 p., illus. (Cambridge manuals of science and literature.) "Literature," p. 133-134.
- Williams, C. B.  
A new type of light trap for insects. Cairo, Government press, 1923, 2 p., 2 pl. (Egypt, Dept. of Agr. Tech. and Scientific service, bul. 28.)
- Zander, Enoch.  
Die Brutkrankheiten und ihre Bekämpfung. 2. aufl. von Die Faulbrut und ihre Bekämpfung. Stuttgart, Verlagsbuchhandlung Eugen Ulmer, 1919. 69 p., 8 pl. (Handbuch der Bienenkunde in Einzeldarstellungen I.)
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